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| APPLICATION NO.  | FILING DATE | FIRST NAMED INVENTOR | ATTORNEY DOCKET NO.       | CONFIRMATION NO. |
|--|-------------|----------------------|---------------------------|------------------|
| 10/723,505   | 11/26/2003  | Dale G. Swan         | SRM0006/US                | 8953             |
| 72870  | 7590        | 12/23/2008           |                           |                  |
| Kagan Binder, PLLC<br>221 Main Street North<br>Suite 200<br>Stillwater, MN 55082 |             |                      | EXAMINER<br>NAFF, DAVID M |                  |
|  |             |                      | ART UNIT                  | PAPER NUMBER     |
|  |             |                      | 1657                      |                  |
|  |             |                      | MAIL DATE                 | DELIVERY MODE    |
|  |             |                      | 12/23/2008                | PAPER            |

**Please find below and/or attached an Office communication concerning this application or proceeding.**

The time period for reply, if any, is set in the attached communication.

|                              |                                      |                                    |  |
|------------------------------|--------------------------------------|------------------------------------|--|
| <b>Office Action Summary</b> | <b>Application No.</b><br>10/723,505 | <b>Applicant(s)</b><br>SWAN ET AL. |  |
|                              | <b>Examiner</b><br>David M. Naff     | <b>Art Unit</b><br>1657            |  |

-- The MAILING DATE of this communication appears on the cover sheet with the correspondence address --

### Period for Reply

A SHORTENED STATUTORY PERIOD FOR REPLY IS SET TO EXPIRE 3 MONTH(S) OR THIRTY (30) DAYS, WHICHEVER IS LONGER, FROM THE MAILING DATE OF THIS COMMUNICATION.

- Extensions of time may be available under the provisions of 37 CFR 1.136(a). In no event, however, may a reply be timely filed after SIX (6) MONTHS from the mailing date of this communication.
- If NO period for reply is specified above, the maximum statutory period will apply and will expire SIX (6) MONTHS from the mailing date of this communication.
- Failure to reply within the set or extended period for reply will, by statute, cause the application to become ABANDONED (35 U.S.C. § 133). Any reply received by the Office later than three months after the mailing date of this communication, even if timely filed, may reduce any earned patent term adjustment. See 37 CFR 1.704(b).

### Status

- 1) ☒ Responsive to communication(s) filed on 22 September 2008.
- 2a) ☐ This action is **FINAL**. 2b) ☒ This action is non-final.
- 3) ☐ Since this application is in condition for allowance except for formal matters, prosecution as to the merits is closed in accordance with the practice under *Ex parte Quayle*, 1935 C.D. 11, 453 O.G. 213.

### Disposition of Claims

- 4) ☒ Claim(s) 1-11, 14-21 and 28-33 is/are pending in the application.
- 4a) Of the above claim(s) 33 is/are withdrawn from consideration.
- 5) ☐ Claim(s) \_\_\_\_\_ is/are allowed.
- 6) ☒ Claim(s) 1-11, 14-21 and 28-32 is/are rejected.
- 7) ☐ Claim(s) \_\_\_\_\_ is/are objected to.
- 8) ☐ Claim(s) \_\_\_\_\_ are subject to restriction and/or election requirement.

### Application Papers

- 9) ☐ The specification is objected to by the Examiner.
- 10) ☐ The drawing(s) filed on \_\_\_\_\_ is/are: a) ☐ accepted or b) ☐ objected to by the Examiner.  
Applicant may not request that any objection to the drawing(s) be held in abeyance. See 37 CFR 1.85(a).  
Replacement drawing sheet(s) including the correction is required if the drawing(s) is objected to. See 37 CFR 1.121(d).
- 11) ☐ The oath or declaration is objected to by the Examiner. Note the attached Office Action or form PTO-152.

### Priority under 35 U.S.C. § 119

- 12) ☐ Acknowledgment is made of a claim for foreign priority under 35 U.S.C. § 119(a)-(d) or (f).
- a) ☐ All b) ☐ Some \* c) ☐ None of:
- ☐ Certified copies of the priority documents have been received.
  - ☐ Certified copies of the priority documents have been received in Application No. \_\_\_\_\_.
  - ☐ Copies of the certified copies of the priority documents have been received in this National Stage application from the International Bureau (PCT Rule 17.2(a)).

\* See the attached detailed Office action for a list of the certified copies not received.

### Attachment(s)

- |  |   |
|--|---|
| 1) <input checked="" type="checkbox"/> Notice of References Cited (PTO-892)            | 4) <input type="checkbox"/> Interview Summary (PTO-413)           |
| 2) <input type="checkbox"/> Notice of Draftsperson's Patent Drawing Review (PTO-948)   | Paper No(s)/Mail Date. _____                                      |
| 3) <input checked="" type="checkbox"/> Information Disclosure Statement(s) (PTO/SB/08) | 5) <input type="checkbox"/> Notice of Informal Patent Application |
| Paper No(s)/Mail Date <u>10/3/08</u> .   | 6) <input type="checkbox"/> Other: _____                          |

### DETAILED ACTION

Claims in the application are 1-11, 14-21 and 28-33.

A response of 9/22/08 to a restriction requirement of 8/20/08 elected Group I claims 1-11, 14-21 and 28-32 with traverse.

5           The traverse is on the ground that the compound of invention II claim 33 can be encompassed by one or more claims 1-11, 14-21 and 28-32 of invention I. However, the claims of invention I can also encompass polymerization accelerators other than the polymerization accelerator having specific groups and formula required claim 33 of Invention II, and due to it's specificity, the specific polymerization accelerator of claim 33 can increase the rate of  
10       polymerization different than polymerization accelerators encompassed by invention I. The restriction requirement is still considered proper, and is adhered to and made final.

Claim 33 is withdrawn from further consideration pursuant to 37 CFR 1.142(b), as being drawn to a nonelected invention, there being no allowable generic or linking claim. Applicant timely traversed the restriction (election) requirement in the reply filed on 9/22/08.

15           Claims examined on the merits are 1-11, 14-21 and 28-32.

### ***Claim Rejections - 35 USC § 112***

The following is a quotation of the second paragraph of 35 U.S.C. 112:

The specification shall conclude with one or more claims particularly pointing out and distinctly claiming the subject matter which the applicant regards as his invention.

20           Claims 1-10, 14-21 and 28-31 are rejected under 35 U.S.C. 112, second paragraph, as being indefinite for failing to particularly point out and distinctly claim the subject matter which applicant regards as the invention.

25           The claims are confusing and unclear as to whether the biocompatible functional group is different from the N-vinyl group and carbonyl group since the N-vinyl group and carbonyl group are capable of reacting and being a functional group, and are inherently biocompatible.

***Claim Rejections - 35 USC § 103***

Claims 1-11, 14-21 and 28-32 are rejected under 35 U.S.C. 103(a) as being unpatentable over Chudzik et al (7,094,418 B2) or Hubbell et al (5,529,914) or Hubbell et al (6,258,870 B1) in view of Scharp et al (7,427,415), and if necessary in further view of Sawhney et al (6,217,894).

5        The claims are drawn to a composition comprising a polymerization accelerator comprising a biocompatible functional group, a carbonyl group, and an N-vinyl group, and a polymerizable material, wherein the accelerator increases the rate of the polymerizable material becoming incorporated into a polymerized product in a polymerization reaction. The functional group can be a sulfonate group.

10        Chudzik et al disclose a composition containing a cross-linkable macromer and an accelerator, which can be N-vinyl caprolactam (col 11, line 14).

      Hubbell et al ('914) and ('870) disclose a method involving combining a macromer with a photoinitiator and a polymerization accelerator, and polymerizing the macromer. For example, see claims 1, 67 and 68 of Hubbell et al ('914) and claims 1, 30 and 31 of Hubbell et al ('870)  
15        where the accelerator is N-vinyl pyrrolidinone.

      Scharp et al disclose carrying out polymerization with a solution containing an ethenically unsaturated PEG and a sulfonated co-monomer (col 12, lines 52-65). Preferably, an accelerator is present which can be N-vinyl caprolactam or N-vinyl pyrrolidinone (col 13, lines 7-12).  
Incorporating a sulfonic acid group to the accelerant can improve biocompatibility of the final  
20        product.

      Sawhney et al disclose that co-monomers such as N-vinyl caprolactam and N-vinyl pyrrolidinone can also act as accelerators when carrying out polymerization (col 11, lines 38-43).

It would have been obvious to provide the N-vinyl carpolactam or N-vinyl pyrrolidinone polymerization accelerator used by Chudzik et al or Hubbell et al ('914) or Hubbell et al ('870) with a sulfonate group to improve biocompatibility as suggested by Scharp et al disclosing polymerization using a sulfonated co-monomer, and that incorporating a sulfonic acid group to an accelerant, which can be N-vinyl carpolactam or N-vinyl pyrrolidinone, improves biocompatibility. N-vinyl carpolactam or N-vinyl pyrrolidinone contain a carbonyl group and an N-vinyl group. Sawhney et al disclose N-vinyl carpolactam or N-vinyl pyrrolidinone functioning as both a co-monomer and as an accelerator, and if needed would have suggested using N-vinyl carpolactam or N-vinyl pyrrolidinone as both a co-monomer and accelerator. When used as a co-monomer, it would have been obvious to provide the N-vinyl carpolactam or N-vinyl pyrrolidinone with a sulfonate group to provide a sulfonated co-monomer that can also function as an accelerator as suggested by Scharp et al. The conditions of dependent claims would have been obvious from conditions disclosed by the references.

### ***Response to Arguments***

The amendment of 2/25/08 argues that Chudzik et al, Hubbell et al ('914) and Hubbell et al ('870) fail to disclose a polymerization accelerator containing a biocompatible functional group, an N-vinyl group and a carbonyl group. However, polymerization accelerators N-vinyl carpolactam and N-vinyl pyrrolidinone contain a carbonyl group and an N-vinyl group. Providing the N-vinyl carpolactam and N-vinyl pyrrolidinone with a sulfonate group is suggested by Scharp et al to improve biocompatibility. Additionally, when using the N-vinyl carpolactam or N-vinyl pyrrolidinone as both a co-monomer and accelerator as suggested by Sawhney et al, it would have been obvious to add a sulfonate group to the N-vinyl carpolactam or N-vinyl pyrrolidinone co-monomer to provide a sulfonated co-monomer as suggested by Scharp et al.

**Conclusion**

Any inquiry concerning this communication or earlier communications from the examiner should be directed to David M. Naff whose telephone number is 571-272-0920. The examiner can normally be reached on Monday-Friday 9:30-6:00.

5 If attempts to reach the examiner by telephone are unsuccessful, the examiner's supervisor, Jon Weber can be reached on 571-272-0925. The fax phone number for the organization where this application or proceeding is assigned is 571-273-8300.

Information regarding the status of an application may be obtained from the Patent Application Information Retrieval (PAIR) system. Status information for published applications  
10 may be obtained from either Private PAIR or Public PAIR. Status information for unpublished applications is available through Private PAIR only. For more information about the PAIR system, see <http://pair-direct.uspto.gov>. Should you have questions on access to the Private PAIR system, contact the Electronic Business Center (EBC) at 866-217-9197 (toll-free). If you would like assistance from a USPTO Customer Service Representative or access to the  
15 automated information system, call 800-786-9199 (IN USA OR CANADA) or 571-272-1000.

/David M. Naff/  
Primary Examiner, Art Unit 1657

DMN  
12/20/08